OPERATING ROOM ORTHOPEDIC TRAY
59th Medical Wing
(Wilford Hall Medical Center)
Lackland AFB TX

Wilford Hall Medical Center's management style is changing. In August 1992, a problem in the operating room was identified by a customer. This customer identified problems with dirty, missing, and non-functional instruments in instrument trays. These instruments are used daily to perform surgery on patients with physical maladies. Instrument trays contain an average of two hundred instruments, and our instrument work room processes over 5,500 instrument trays a month. Concerned with customer satisfaction, a process action team was formed known as "TRAYPAT."

"TRAYPAT" began with an education process. We learned a new concept with Total Quality Management. Our education path led us to guide our team through the Following process and its concepts of improving quality:

Find a process to improve.
Organize a team that knows the process.

Clarify current knowledge of the process.
Uncover the causes of process variation and poor quality.
Start the "Plan-Do-Check-Act" cycle.

Plan the process improvement.
Do the improvement, data collection, and analysis.
Check the results and lessons learned.
Act to hold the gain; adopt, adjust, or abandon the change.

By using the above process as a guide, we began our journey through Total Quality Management.

Our opportunity statement provided key boundaries for this process. The boundaries begin with dirty orthopedic instruments on a tray and end with the return of clean instruments in the operating room for the next surgical procedure. Problems noted were as follow:

- Instrument trays, when opened in the operating room, are incomplete for some surgical procedures.
- Patients spend longer periods under anesthesia than necessary.
- Support teams are not oriented to all phases of surgical tray preparation.
- Delays are incurred when incorrect instruments are placed in the trays, this impacts operating room utilization.

We used flowcharting, data collection, Pareto analysis, check sheets, cause and effect diagrams, and other methods to gather all the information necessary to solve our instrument problem.

Analysis of the data collected identified eight key areas that were responsible for our instrument problems. We discovered that our technician training program was deficient, workstations were inadequate, acquisition of instruments was poor, identification of broken instruments was non-existent, cleaning capabilities for instruments were lacking, dirty cart loading procedures were incorrect, a tremendous excess of unneeded instruments exist, and preventative maintenance for instruments was not being conducted.

Solutions to these problems were acquired through brainstorming, customer surveys, interviews with workers at all levels, internal and external customer ideas, and the experience and knowledge level of the team itself

Clarification of our problems resulted in the following implemented solutions.

- Since our training program was deficient, we developed a 35mm video on instrument cleaning. In-services were given by physicians on the proper handling and care of instruments.
- Main workstations were modernized and relocated to improve human resources.
- Telephones were reconfigured and additional lines were installed to provide a speedy response for instrument requests.
- In addition a rapid response instrument cabinet was created to provide immediate access to more than 40 of the most commonly used instruments-
- A cold water washer sterilizer was acquired from an external customer at no cost through a base closure. This washer enables instruments to be more efficiently cleaned.
- A toothbrush was added to trays to aid the technician in post-case cleaning.
- Cart-loading procedures were demonstrated to all technicians to aid in better handling of instruments.
- Hundreds of thousands of dollars were saved by eliminating excess instrumentation. We traded old, unused instrument systems dollar for dollar with different companies and acquired new state-of-the-art systems. One trade of unused instruments netted $53,000 worth of joint prostheses used by surgeons to correct severe arthritic conditions in knees. We expanded our services to include other members in the Department of Defense. We actively sought a customer for an unused instrument system through a local company representative. This instrument system, valued at $60,000, was shipped to a Naval Medical Center in San Diego.
- Other significant changes included placing a blue repair tag on instruments that were unserviceable. These tags are provided at no charge by our instrument repair contractor.

- A preventative maintenance schedule was implemented to keep instruments sharp, functioning, and always in use.

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Post-data collection has demonstrated the effectiveness of the above changes. These changes resulted in a savings of 73 person hours per month with regards to processing instruments. Further data collection in the fall will identify if we are still holding these gains.

As **a** result of this process action team, instrument trays opened in the operating room are now complete. Patients spend less time under anesthesia, support teams are well trained in **all** phases of surgical tray preparation, delays waiting for instruments have been significantly reduced, and operating room utilization has increased.

Coordinator: Lt Col Donna M. Stone

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